

Take the Reins on Model Quality with ModelCHECK and Gatekeeper

Abstract:

Model quality and consistency has been an issue for us due to the diverse experience level and imaginative modeling techniques of our users. Fortunately, setting up ModelCHECK and Gatekeeper to enforce our best practices has helped greatly, but it wasn't easy. There were many challenges associated with setting up ModelCHECK and Gatekeeper including: limited documentation, restrictions within ModelCHECK, and resistance from end users. However, we consider ours a success story. In this presentation we will describe how we overcame these obstacles and present some of the details of how we configured them to work for us.

Takeaways:

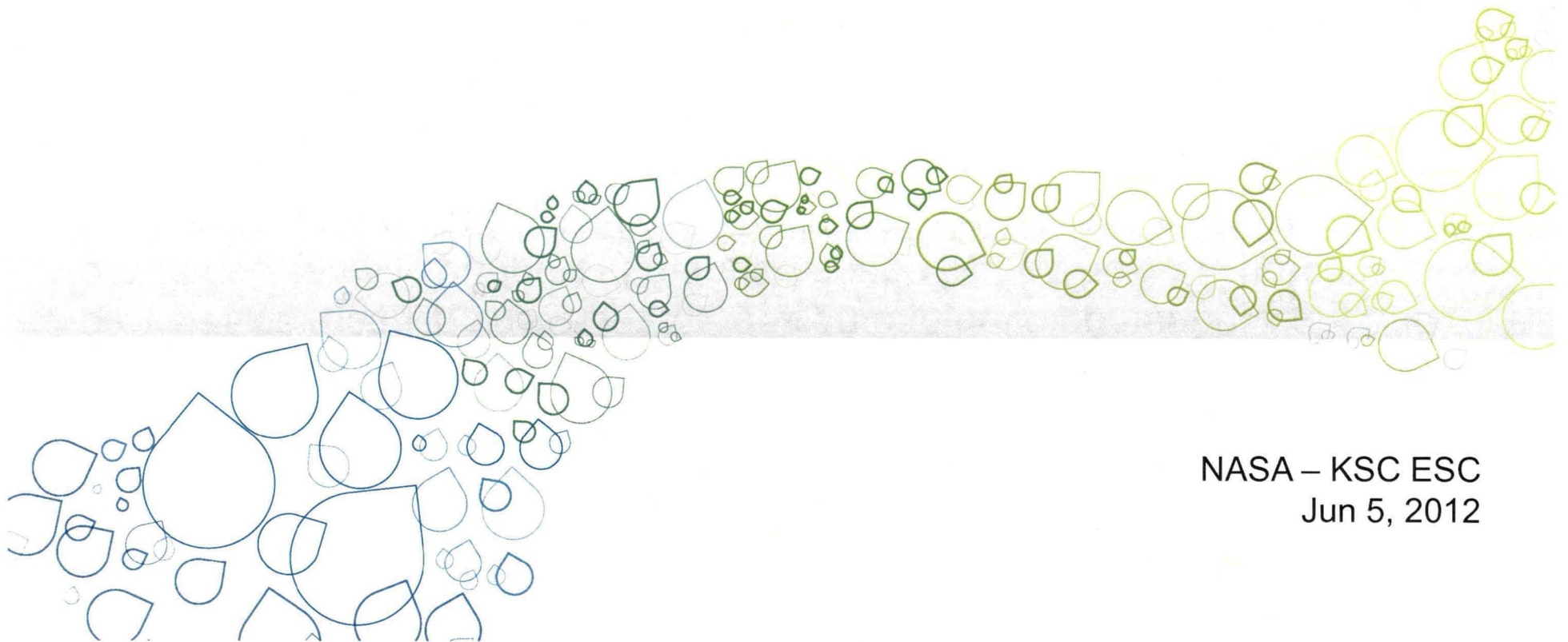
The attendee will understand the roles and capabilities of ModelCHECK and Gatekeeper.

The attendee will learn how we configured ModelCHECK to perform checks based on file type.

The attendee will learn how we manage the configuration of ModelCHECK.



Take the Reins on Model Quality with ModelCHECK and Gatekeeper



NASA – KSC ESC
Jun 5, 2012

ESC Design Development Process Support Team

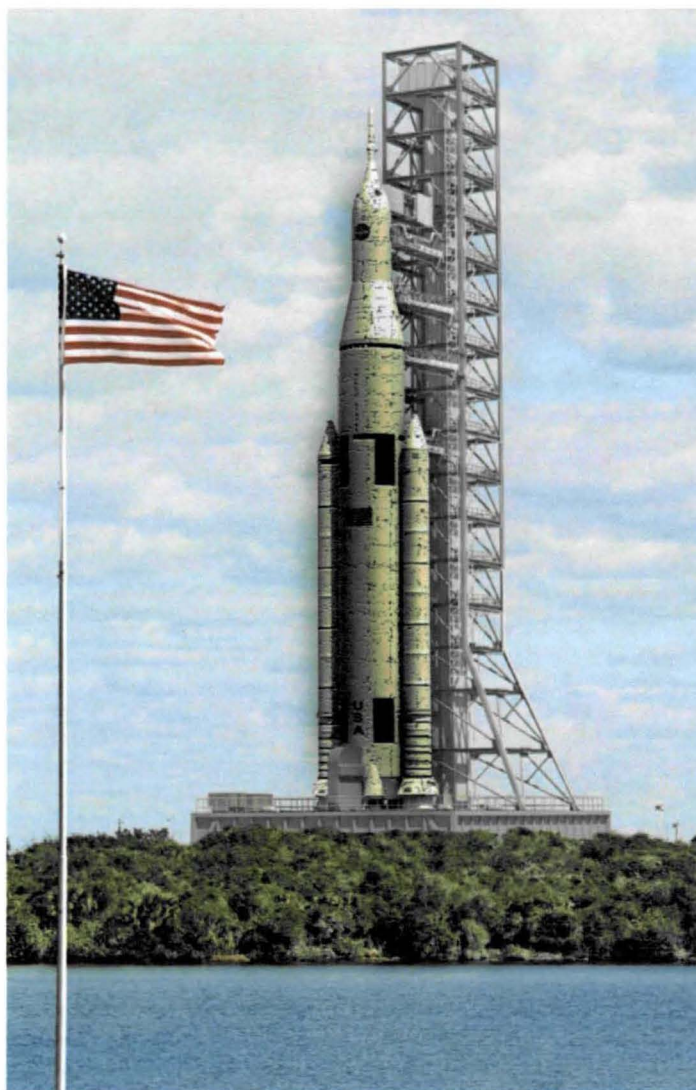


The Engineering Services Contract (ESC) at Kennedy Space Center provides services to NASA for the design and development of flight and ground systems in support of manned space flight. The ESC process support team provides for efficient optimized design and development processes through development, configuration, and implementation of software tools, training, documentation and standards. The team of 7 people supports over 200 engineers and design specialists using Windchill, Pro-E, NX, AutoCAD, and other design and analysis tools.



Agenda

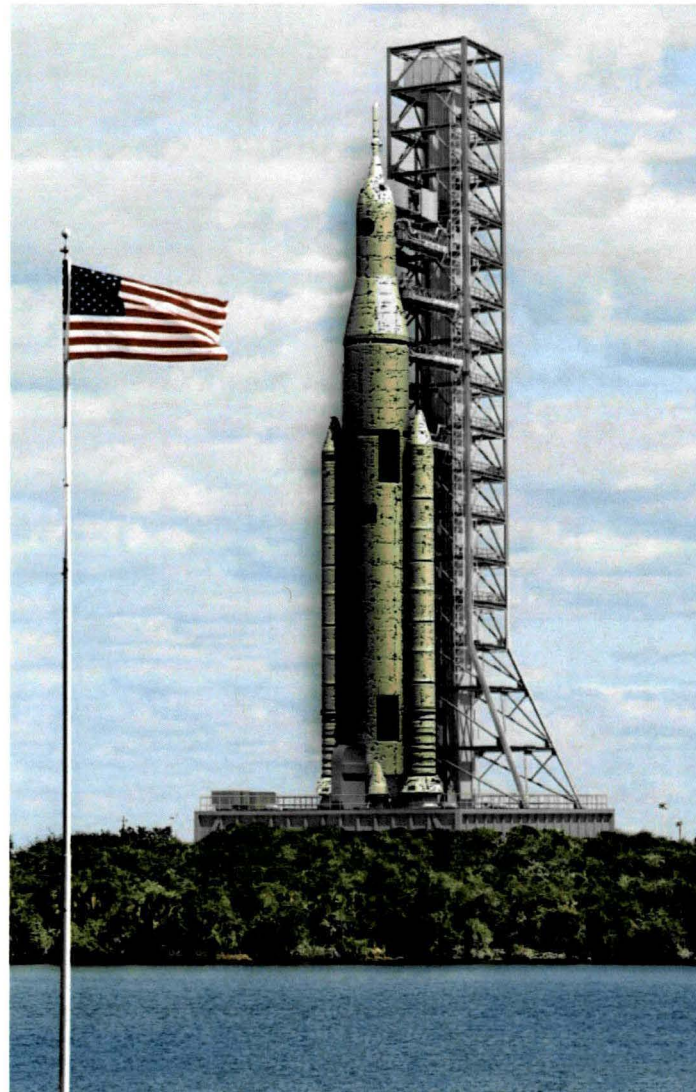
- Issues
- Solutions
 - ModelCHECK
 - Gatekeeper
- Interaction
- Configuration
- Results



Incomplete
Information

Wrong Config

Extra/Missing
References



Geom. Checks

External
References

Circle
References

- Evaluates models to a company's modeling standards and best practices
- Updates Model Parameters based on Results
- Allows User Interaction to correct Errors and Warnings

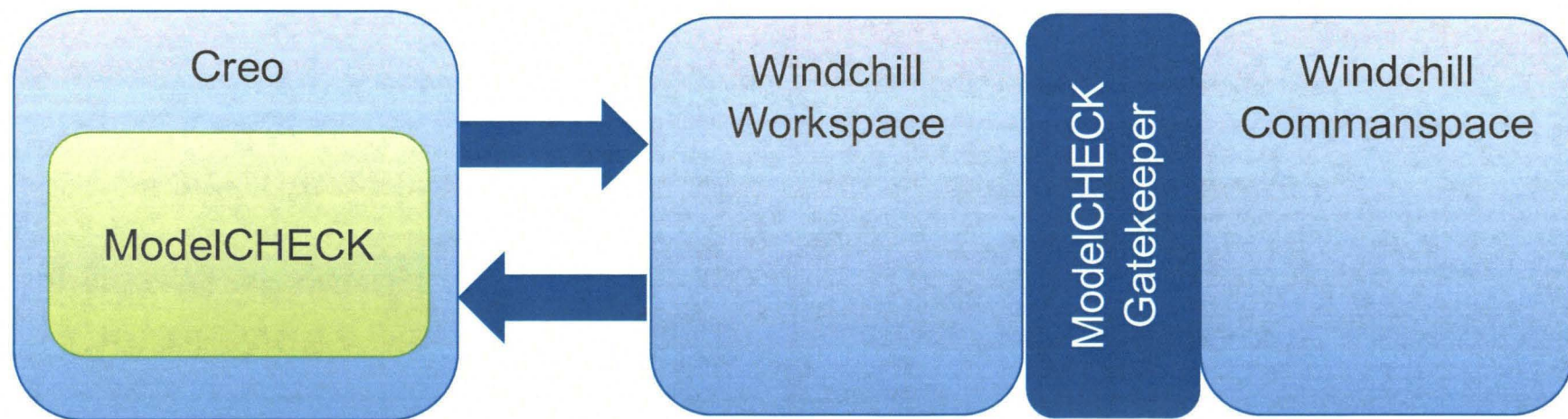


Gatekeeper

- Validates Requirements
- Requirements Pass - Check-In Allowed
- Requirements Fail - Check-In Fails



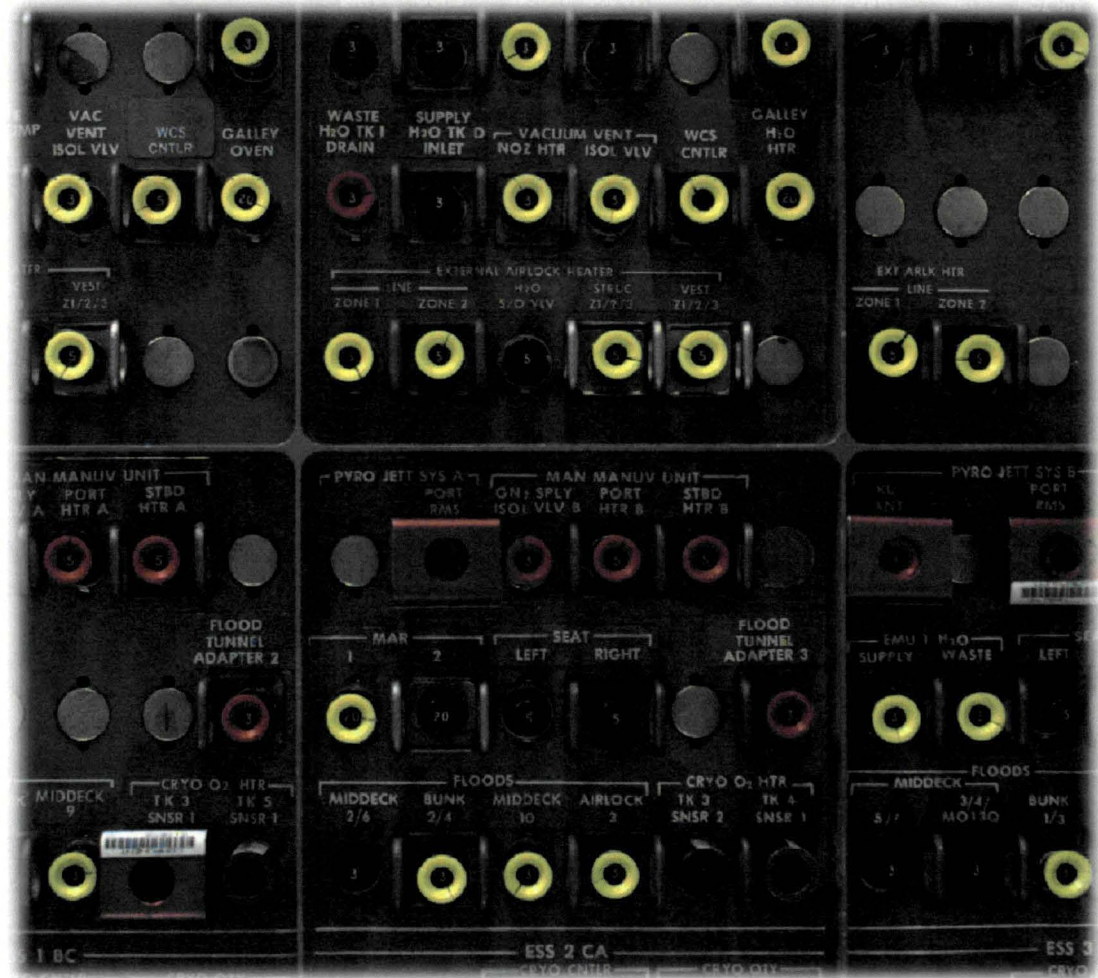
Tool Interaction



Necessary ModelCHECK Configurations

Defined in CONFIG_INIT.MC

- 'MC_ENABLE Y'
- 'RUN_MODE Y'
- 'ADD_DATE_PARAM Y'
- 'ADD_ERR_PARM Y'
- 'ADD_CONFIG_PARM Y'
- 'UPDATE_MC_PARAMS Y'
- 'DATE_PARAM_GMT_FORMAT Y'
- 'ADD_MODE_PARM Y'
 - Note: PDMLink 9.1 M030.
- 'ADD_VERIFIED_PARM Y'
 - Note: Wildfire 4.0 M100 in conjunction PDMLink 9.1 M030.



- **MC_CONFIG**

Data Type: **String**

Logical Identifier: **MC_CONFIG**

- **MC_ERRORS**

Data Type: **Integer Number**

Logical Identifier: **MC_ERRORS**

- **MC_MODE**

Data Type: **String**

Logical Identifier: **MC_CONFIG**

- **MC_VERIFIED**

Data Type: **Boolean**

Logical Identifier: **MC_CONFIG**

- **MODEL_CHECK**

Data Type: **String**

Logical Identifier: **MODEL_CHECK**

For more info on configuring
IBAs see Handout A.

Configuring the ModelCHECK Condition file



- Edit condition.mcc to specify the desired set of configuration files to apply against all objects in Windchill.
- Configuration files may be assigned in condition.mcc according to a parameter in the model, including the lifecycle of the CAD Document as shown.

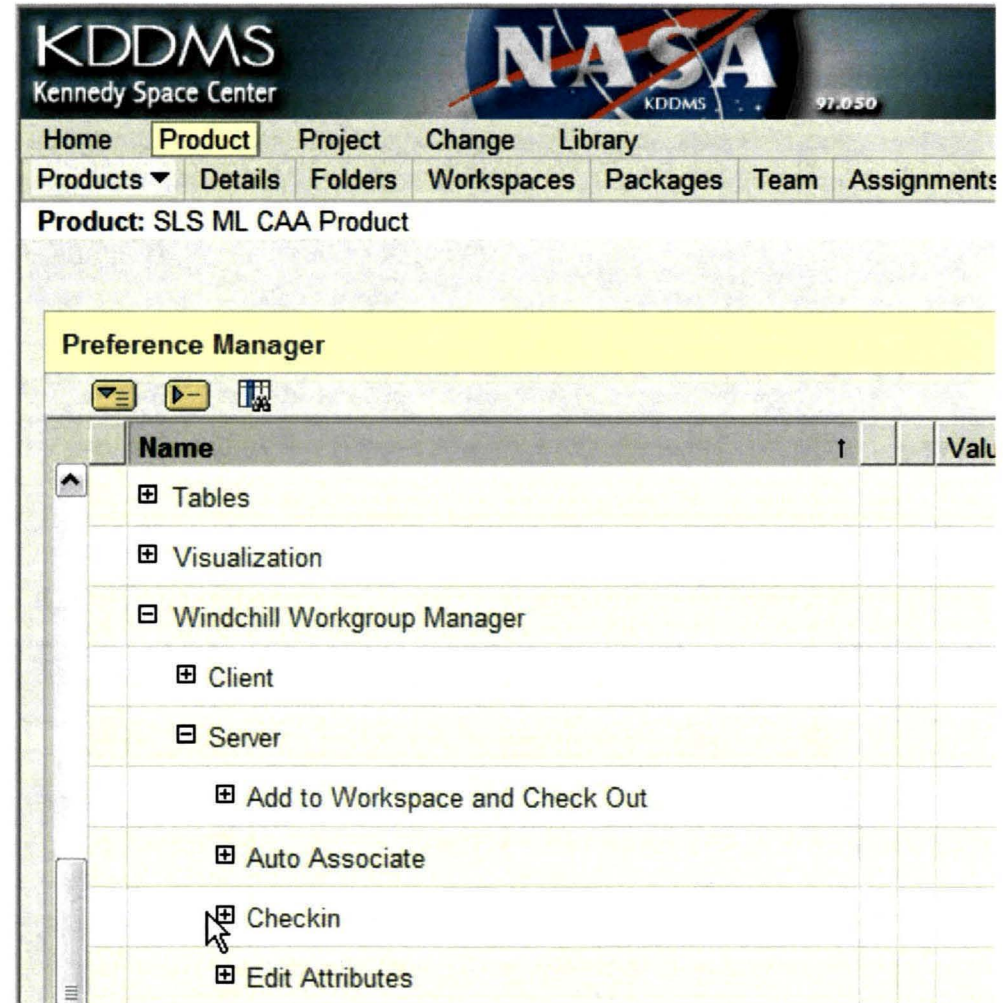
```
IF (PTC_WM_LIFECYCLE EQ Default) config=(check/default_checks.mch)(start/nostart.mcs)(constant/inch.mcn)(status/review_status.mcq)
IF (PTC_WM_LIFECYCLE EQ Basic) config=(check/basic_check.mch)(start/basic_start.mcs)(constant/inch.mcn)(status/basic_status.mcq)
IF (PTC_WM_LIFECYCLE EQ Release) config=(check/release_check.mch)(start/release_start.mcs)(constant/inch.mcn)(status/release_status.mcq)
IF (PTC_WM_LIFECYCLE EQ Approval) config=(check/approval_check.mch)(start/approval_start.mcs)(constant/inch.mcn)(status/approval_status.mcq)
IF (PTC_WM_LIFECYCLE EQ Review) config=(check/review_check.mch)(start/review_start.mcs)(constant/inch.mcn)(status/review_status.mcq)
ELSE config=(check/basic_check.mch)(start/basic_start.mcs)(constant/inch.mcn)(status/basic_status.mcq)
```

Note:

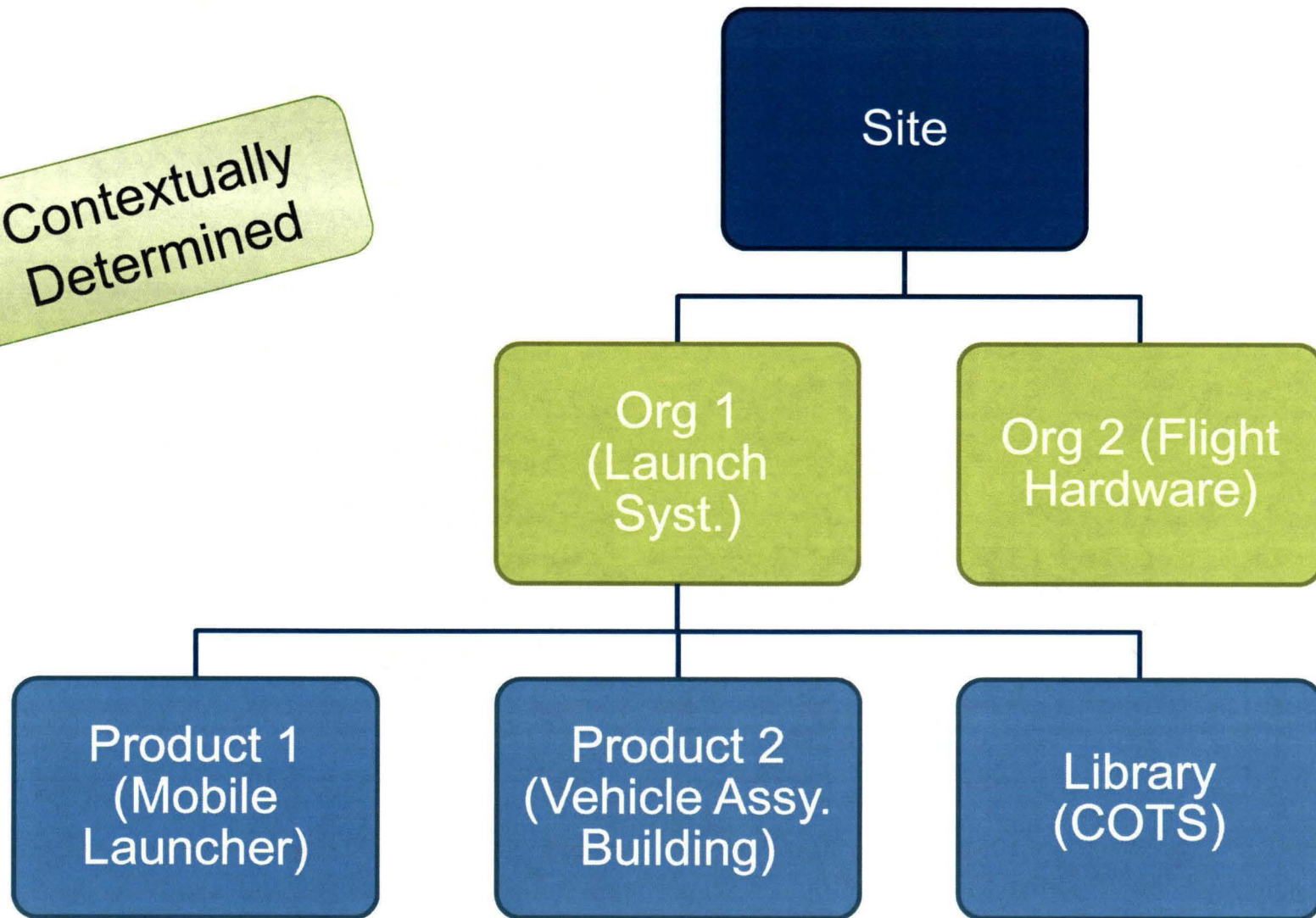
- The condition.mcc and the path to the configuration files do not support spaces.
- Each IF or ELSE statement should begin a new line.
- The ELSE statement should align to the lifecycle defined in the CAD Document Object Initialization Rules (OIR).
- Lifecycle names are available from the Lifecycle Administrator or from the model parameter PTC_WM_LIFECYCLE in the Pro/ENGINEER files.
- Currently ModelCHECK cannot apply configuration files per lifecycle state: In work, Prototype, Released, Obsolete, etc.
- Currently ModelCHECK Gatekeeper is only configured at the site level and cannot apply different configuration files per container: Site, Organization, Product, Library, Project.

Setting Preferences

- Preferences set on each Context
- [Windchill Workgroup Manager] [Server] [Checkin]
 - ModelCHECK Validation
 - ModelCHECK Configuration
 - ModelCHECK Mode
 - ModelCHECK Number of Errors
 - ModelCHECK Number of Hours



Contextually
Determined



ModelCHECK Validation

Set Preference - Windows Internet Explorer

Set Preference ?

Name: ModelCHECK Validation

Description: Specifies whether ModelCHECK validation is performed at Check In. The default is false.

Context: Product - ML SLS Pneumatic Delivery Product

Value: ☒ Yes
☐ No

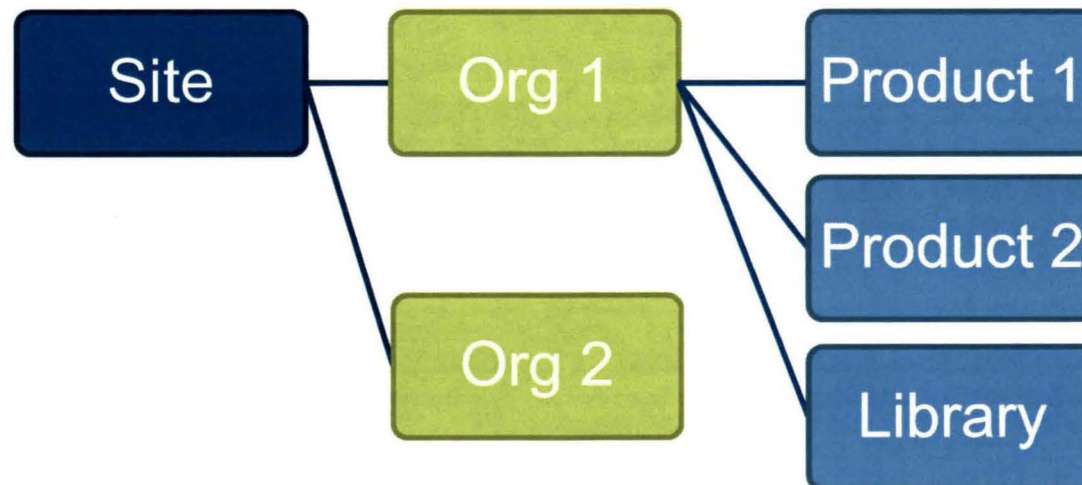
Locked: ☐

* Indicates required fields.

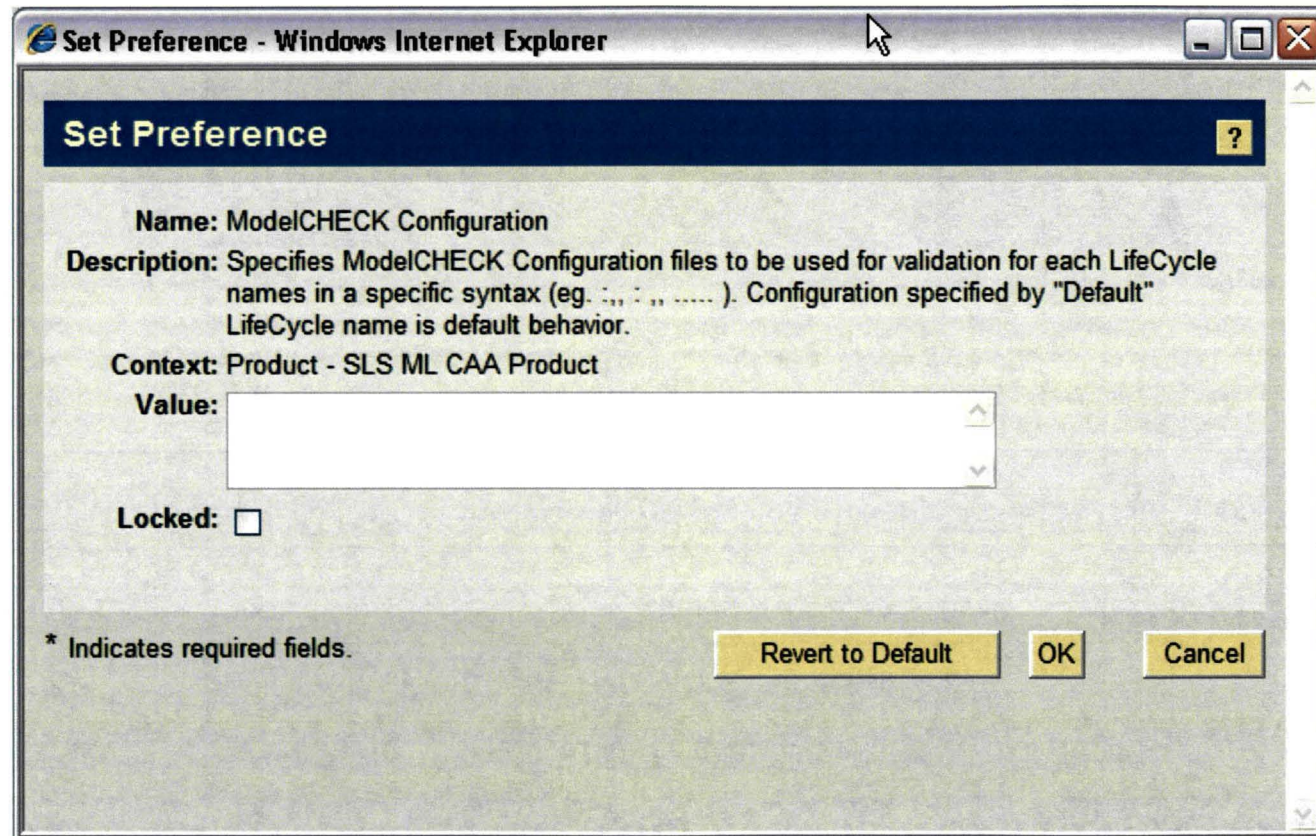
Revert to Default OK Cancel

ModelCHECK Validation

ModelCHECK Validation Site Setting Options		
Value	Lock	Description
No	Yes	Default settings – Disables ModelCHECK Gatekeeper at all contexts
Yes	Yes	Enables ModelCHECK Gatekeeper for all contexts. Only checks against preferences set at the site context
No	No	Disables ModelCHECK Gatekeeper at the site level but allows Gatekeeper to be set at different contexts
Yes	No	Enables ModelCHECK Gatekeeper for all contexts. Checks against preferences set at each context



ModelCHECK Configuration



Set Preference ?

Name: ModelCHECK Configuration

Description: Specifies ModelCHECK Configuration files to be used for validation for each LifeCycle names in a specific syntax (eg. :,, :,,). Configuration specified by "Default" LifeCycle name is default behavior.

Context: Product - SLS ML CAA Product

Value:

Locked: ☐

* Indicates required fields.

Revert to Default OK Cancel

- <Lifecycle_1>:<mch_file1>,<mcs_file1>,<mcn_file1>
- <Lifecycle_2>:<mch_file2>,<mcs_file2>,<mcn_file2>.....
- For example:

Default:check/default_checks.mch,start/nostart.mcs,constant/inch.mcn,status/review_status.mcq

Basic:check/basic_checks.mch,start/basic_start.mcs,constant/inch.mcn,status/review_status.mcq

Release:check/release_checks.mch,start/release_start.mcs,constant/inch.mcn,status/review_status.mcq

Approval:check/approval_checks.mch,start/approval_start.mcs,constant/inch.mcn,status/review_status.mcq

Review:check/review_checks.mch,start/review_start.mcs,constant/inch.mcn,status/review_status.mcq

- **Notes:**
 - Each line of the ModelCHECK Configuration value is a separate lifecycle configuration.
 - Spaces are not supported in the value of ModelCHECK Configuration.
 - Clearing the value of ModelCHECK Configuration should skip validation of the configuration files.

ModelCHECK Mode

Set Preference - Windows Internet Explorer

Set Preference ?

Name: ModelCHECK Mode
Description: Specifies ModelCHECK Mode allowed for Model to be validated. Default is Interactive.
Context: Organization - 22264

Value: Interactive ▼

Locked: ☒

Revert to Default OK Cancel

Value: Interactive
Locked: Disabled
Interactive
Regenerate Explicit
Regenerate Implicit
Regenerate Always
Save
Batch

ModelCHECK Number of Errors

Set Preference - Windows Internet Explorer

Set Preference ?

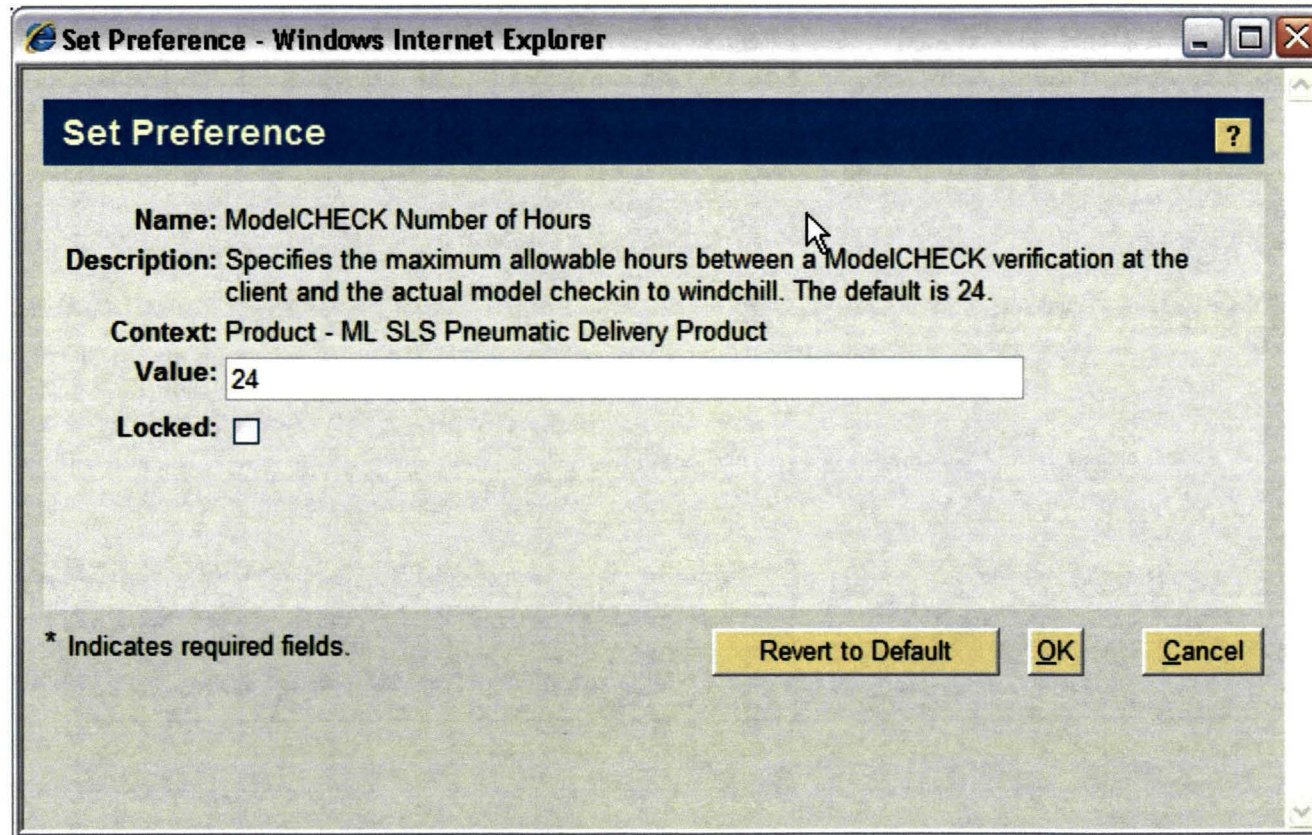
Name: ModelCHECK Number of Errors
Description: Specifies the maximum number of ModelCHECK errors allowed. The default is 0.
Context: Product - SLS ML CAA Product

Value:

Locked: ☐

* Indicates required fields.

ModelCHECK Number of Hours



Set Preference ?

Name: ModelCHECK Number of Hours

Description: Specifies the maximum allowable hours between a ModelCHECK verification at the client and the actual model checkin to windchill. The default is 24.

Context: Product - ML SLS Pneumatic Delivery Product

Value: 24

Locked: ☐

* Indicates required fields.

Revert to Default OK Cancel


Notes:

Pro/ENGINEER Wildfire 4.0 M100 and Windchill PDMLink 9.1 M030 change the behavior of ModelCHECK Gatekeeper and mark files as out of date with ModelCHECK based on the Workspace status, not a time increment. The status is stored in the MC_VERIFIED parameter/IBA when available. ModelCHECK Number of Hours is still required for any software combination where at least one component is using an older date code.

Checkin Results
















K0000058332 Rev: -.11+ In Work (Active) wtws://KSC_KDDMS.

File Edit View Insert Analysis Info Applications Tools KSC TOOLS



- Started upload of documents.
- Upload succeeded.
- Started checkin of documents. Associated parts will also be checked in ...
- Checkin failed. See event manager for more details.

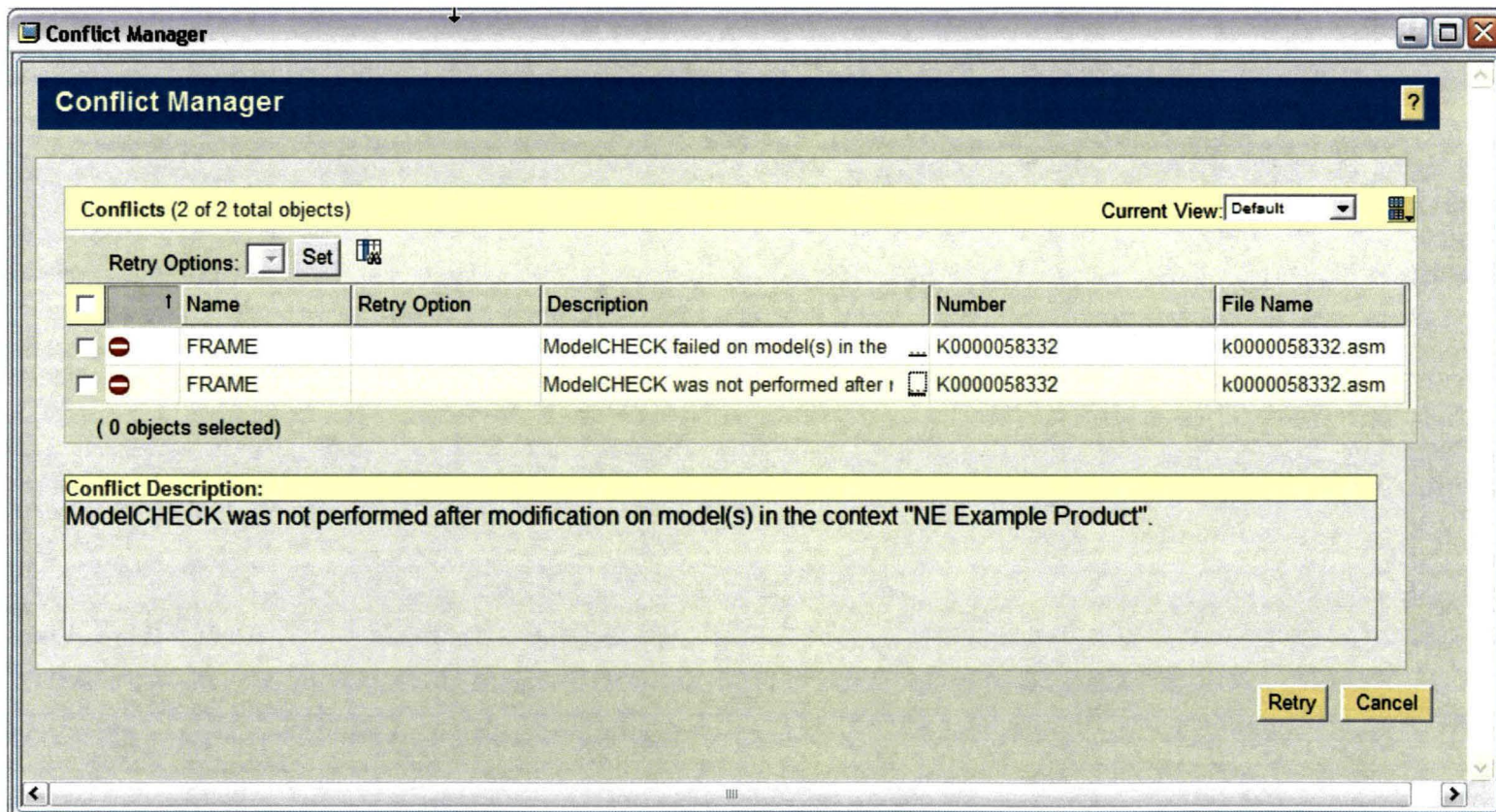
Events (18 of 18 total objects) Current View: Default Workspace (Demo)

<input type="checkbox"/>	Name	Status		Start Date	End Date
<input type="checkbox"/>	 Checkin	Failed	 	2012-04-27 18:00 ...	2012-04-27 18:00 EDT
<input type="checkbox"/>	 Upload	Succeeded with War	 	2012-04-27 18:00 ...	2012-04-27 18:00 EDT
<input type="checkbox"/>	Save	Succeeded		2012-04-27 18:00 ...	2012-04-27 18:00 EDT
<input type="checkbox"/>	Add	Succeeded with Addi	 	2012-04-27 18:00 ...	2012-04-27 18:00 EDT
<input type="checkbox"/>	Auto Number	Succeeded		2012-04-27 11:44 ...	2012-04-27 11:44 EDT
<input type="checkbox"/>	Auto Number	Succeeded		2012-04-26 12:02 ...	2012-04-26 12:02 EDT
<input type="checkbox"/>	Auto Number	Succeeded		2012-04-26 12:02 ...	2012-04-26 12:02 EDT
<input type="checkbox"/>	Download	Succeeded		2012-04-26 10:16 ...	2012-04-26 10:16 EDT
<input type="checkbox"/>	Auto Number	Succeeded		2012-04-25 09:59 ...	2012-04-25 09:59 EDT
<input type="checkbox"/>	Auto Number	Succeeded		2012-04-25 09:59 ...	2012-04-25 09:59 EDT

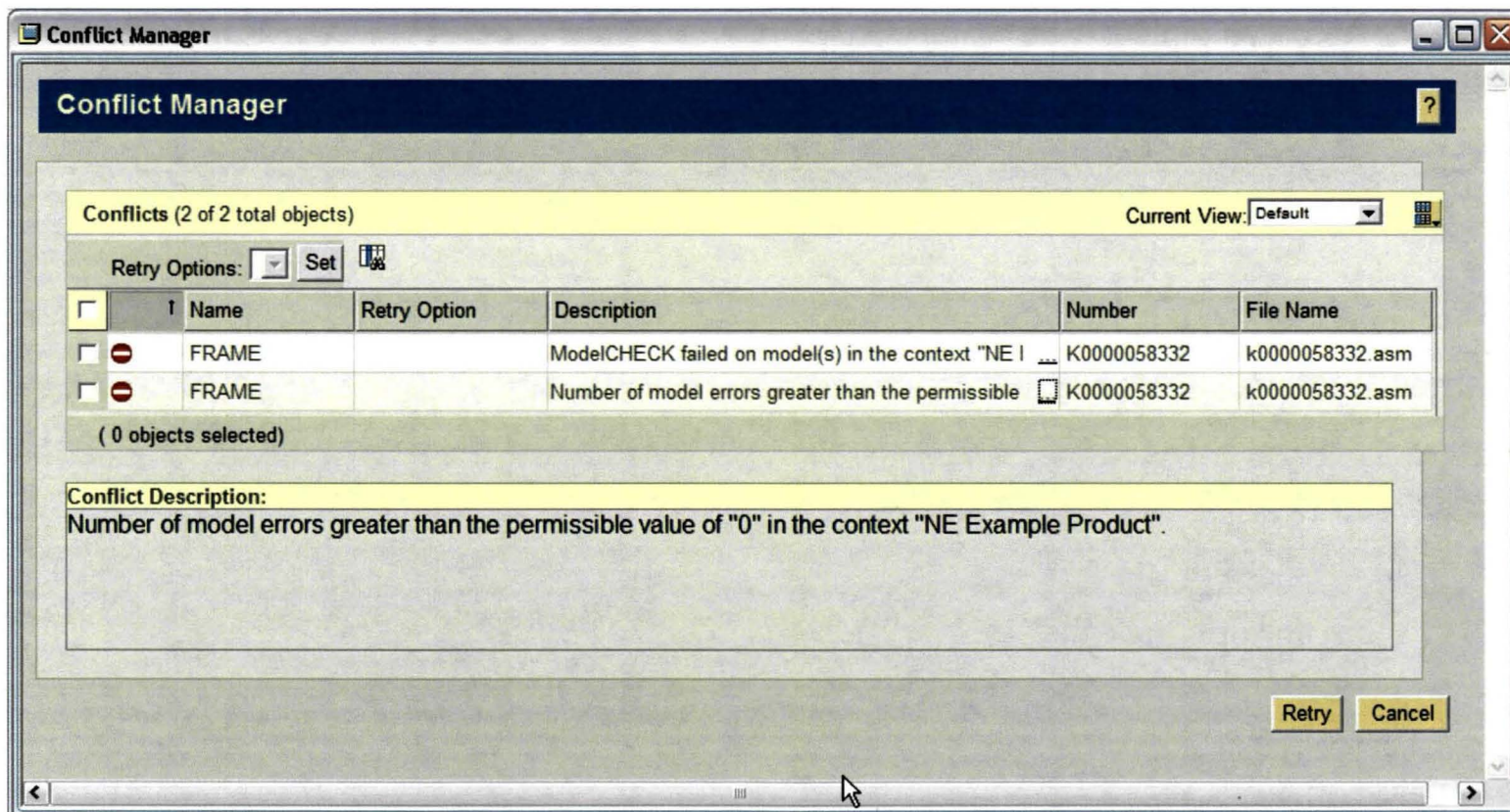
(0 objects selected)

Close

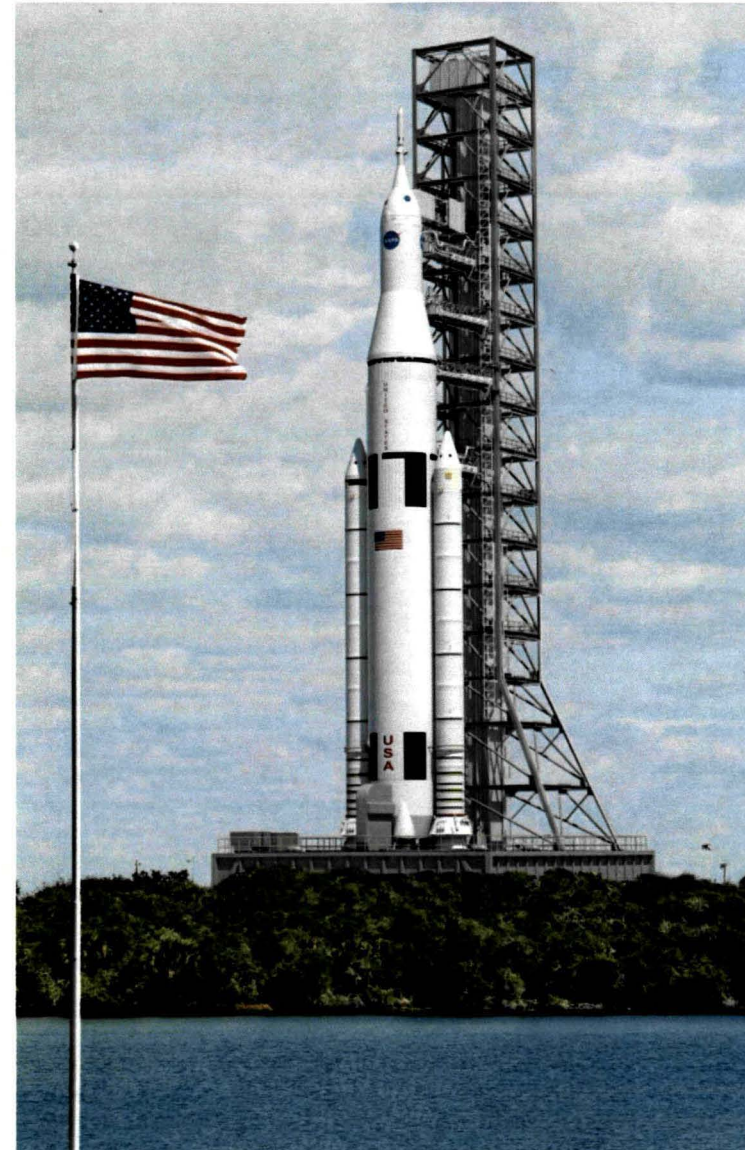
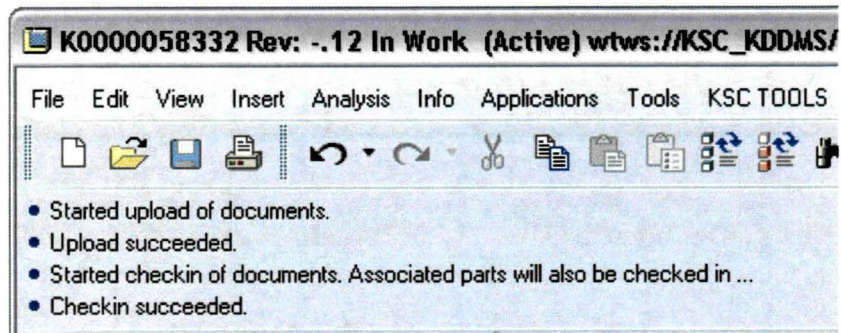
Example Conflicts



Example Conflicts



Success



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